

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
TYLER DIVISION**

**EIDOS DISPLAY, LLC, and  
EIDOS III, LLC**

**Plaintiffs,**

**vs.**

**AU OPTRONICS CORPORATION, et al.,**

**Defendants.**

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**No. 6:11cv201 LED-JDL**

**JURY DEMANDED**

**MEMORANDUM OPINION AND ORDER**

This claim construction opinion construes the disputed terms of U.S. Patent No. 5,879,958 (“the ‘958 Patent”). For the reasons stated herein, the Court adopts the constructions set forth below.

**BACKGROUND**

Plaintiffs Eidos Display, LLC and Eidos III, LLC (collectively “Plaintiffs”) allege Defendants<sup>1</sup> infringe claim 1 of the ‘958 Patent (“patent-in-suit”). The parties have presented extensive claim construction briefing. (Doc. Nos. 149, 153, 159).

On November 14, 2012, Plaintiffs filed their opening claim construction brief in this case (Doc. No. 149) (“PLS.’ BR.”). Defendants collectively filed a single responsive claim construction brief (Doc. No. 153) (“DEFS.’ BR.”), and Plaintiffs have filed a reply brief (Doc. No. 159) (“REPLY”).

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<sup>1</sup> Defendants are: AU Optronics Corporation; AU Optronics Corporation America; Chi Mei Innolux Corporation; Chi Mei Optoelectronics USA, Inc.; Chungwa Picture Tubes, Ltd.; Hannstar Display Corporation; and Hannspree North America, Inc. (collectively “Defendants”).

### **CLAIM CONSTRUCTION PRINCIPLES**

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The Court examines a patent’s intrinsic evidence to define the patented invention’s scope. *Id.* at 1313–14; *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). Intrinsic evidence includes the claims, the rest of the specification and the prosecution history. *Phillips*, 415 F.3d at 1312–13; *Bell Atl. Network Servs.*, 262 F.3d at 1267. The Court gives claim terms their ordinary and customary meaning as understood by one of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

Claim language guides the Court’s construction of claim terms. *Phillips*, 415 F.3d at 1314. “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Other claims, asserted and unasserted, can provide additional instruction because “terms are normally used consistently throughout the patent.” *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.*

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). In the specification, a patentee may define his own

terms, give a claim term a different meaning that it would otherwise possess, or disclaim or disavow some claim scope. *Phillips*, 415 F.3d at 1316. Although the Court generally presumes terms possess their ordinary meaning, this presumption can be overcome by statements of clear disclaimer. See *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343-44 (Fed. Cir. 2001). This presumption does not arise when the patentee acts as his own lexicographer. See *Irdeto Access, Inc. v. EchoStar Satellite Corp.*, 383 F.3d 1295, 1301 (Fed. Cir. 2004).

The specification may also resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. For example, “[a] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’” *Globetrotter Software, Inc. v. Elam Computer Group Inc.*, 362 F.3d 1367, 1381 (Fed. Cir. 2004) (quoting *Vitronics Corp.*, 90 F.3d at 1583). But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988); see also *Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patentee may define a term during prosecution of the patent. *Home Diagnostics Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent”). The well-established doctrine of prosecution disclaimer “preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *Omega Eng’g Inc. v.*

*Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). The prosecution history must show that the patentee clearly and unambiguously disclaimed or disavowed the proposed interpretation during prosecution to obtain claim allowance. *Middleton Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002); *see also Springs Window Fashions LP v. Novo Indus., LP*, 323 F.3d 989, 994 (Fed. Cir. 2003) (“The disclaimer . . . must be effected with ‘reasonable clarity and deliberateness.’”) (citations omitted). “Indeed, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover.” *Spectrum Int’l v. Sterilite Corp.*, 164 F.3d 1372, 1378–79 (Fed. Cir. 1988) (quotation omitted). “As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public’s reliance on definitive statements made during prosecution.” *Omega Eng’g, Inc.*, 334 F.3d at 1324.

Although, “less significant than the intrinsic record in determining the legally operative meaning of claim language,” the Court may rely on extrinsic evidence to “shed useful light on the relevant art.” *Phillips*, 415 F.3d at 1317 (quotation omitted). Technical dictionaries and treatises may help the Court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. *Id.* at 1318. Similarly, expert testimony may aid the Court in determining the particular meaning of a term in the pertinent field, but “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful.” *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

## **DISCUSSION**

### **A. Overview of the Patent-in-Suit**

The ‘958 Patent is titled “Method of Producing an Electro-Optical Device” and relates to the process of forming circuitry used in controlling liquid crystal displays (“LCD”). Specifically, the ‘958 relates to the process for forming an array of thin film transistors (“TFT”) and pixel electrodes that are used to control the light emission of an LCD. Notably, the ‘958 Patent contains 17 embodiments (identified as A-S) providing various manufacturing processes that reduce the number of photolithographic steps. *See* ‘958 Patent at 4:50–14:18 (describing processes with four or five lithographic steps as opposed to seven).

Claim 1 is the only issued claim in the ‘958 Patent. Claim 1 recites as follows:

1. A method for producing an electro-optical device in which an electro-optical material is put between a pair of substrates opposed to each other, at least a portion of opposing surfaces of the substrates is insulative, a plurality of source wirings and a plurality of gate wirings are formed crossing each other on the surface of one of said pair of substrates and a transparent pixel electrode and a thin film transistor are formed at each of the crossing points between the source wirings and the gate wirings, wherein the method comprises:
  - a step G1 of forming a first metal film on the surface of said one substrate,
  - a first photolithographic step G2 of patterning the first metal film to form a gate electrode and a gate wiring,
  - a step G3 of forming a first insulator film, a semiconductor film and an ohmic contact film on the surface of said one substrate after the first photolithographic step,
  - a second photolithographic step G4 of patterning the semiconductor active film and the ohmic contact film to form a semiconductor portion

- above the gate electrode in a state isolated from other portions,
- a step G5 of forming a second metal film on the surface of said one substrate after the second photolithographic step,
- a third photolithographic step G6 of patterning the second metal film and the ohmic contact film to form a source electrode, a drain electrode and a channel portion,
- a step G7 of forming a passivation film on the surface of said one substrate after the third photolithographic step, and
- a fourth photolithographic step G8 of patterning the passivation film to form a contact hole reaching the gate wiring, a contact hole reaching the drain electrode and a contact hole for source wiring and gate wiring connection terminals,
- a step G9 of forming a transparent conductive film on the surface of said one substrate after the fourth photolithographic step, and
- a fifth photolithographic step G10 of patterning the transparent conductive film to form a transparent pixel electrode.

‘958 Patent at 58: 5–47.

## B. Disputed Terms

Claim Language	Plaintiffs’ Proposal	Defendants’ Proposal	Court’s Construction
1. “patterning the passivation film to form a contact hole reaching the gate wiring, a contact hole reaching the drain electrode and a contact hole for source wiring and gate wiring connection terminals”			

Claim Language	Plaintiffs' Proposal	Defendants' Proposal	Court's Construction
958: 1	“removing portions of the passivation film to form an opening exposing a portion of the gate wiring, an opening exposing a portion of the drain electrode, an opening for a source wiring connection terminal, and an opening for a gate wiring connection terminal”	“Plain meaning, which is removing portions of the passivation film to form a first opening exposing a portion of the gate wiring, a second opening exposing a portion of the drain electrode, and a third opening for source wiring and gate wiring connection terminals”	Not ripe for construction

The above-quoted portion of step G8 of claim 1 presents the primary claim construction dispute between the parties. The parties dispute whether the claim requires 3 or 4 contact holes, and whether those corresponding holes must be “separate and distinct.” Much of this dispute centers around the very last portion of step G8, “a contact hole for source wiring and gate wiring connection terminals,” and whether this portion of the claim recites a common contact hole for both terminals, or whether it calls for separate contact holes—one opening for a source wiring connection terminal and one opening for a gate wiring connection terminal.

Plaintiffs argue that the last portion of the claim calls for separate openings for the source wiring connection terminal and the gate wiring connection terminal. PLS.’ BR. at 29. Plaintiffs point to a portion of the specification describing step D8, the fourth photolithographic step of claim 5, to uphold their position. *Id.* at 28. That section reads as follows: “...a contact hole 132 for a source wiring connection terminal and a contact hole for a gate wiring connection terminal...” ‘958 Patent at 31:50–52. Plaintiffs also contend that their construction is consistent

with both the plain language of the claim that reads “a contact hole,” “a” meaning “one or more,” and the prosecution history, whereby the Examiner allowed the claim saying “to form contact holes reaching to the gate wiring, drain electrode, source wiring and gate wiring connection terminals” was not taught in the prior art. PLS.’ BR. at 29.

Defendants argue that the claim language unambiguously states “...a contact hole for source wiring and gate wiring connection terminals...” thereby meaning a common hole for both connection terminals. DEFS.’ BR. at 7. Defendants contend that if the Court were to construe the phrase to mean two separate holes, it would improperly re-write the unambiguous claim language. *Id.* at 8–9. Defendants point out that the G embodiment, the embodiment that corresponds to issued claim 1, does not disclose two separate holes; it is only in the D embodiment that corresponds to original claim 5, where the Plaintiffs find support for their argument. *Id.* at 9. Aside from this distinction, Defendants also point out that the formation of “a contact hole for gate wiring” and “a contact hole for gate wiring connection terminals” disclosed in the D embodiment are not created in a single step. Thus, Defendants also state it would be improper to rewrite the claim to require separate and distinct contact holes for the contact hole reaching the gate wiring and the contact hole for the gate wiring connection terminal. *Id.* at 7. Defendants argue that nowhere does the specification disclose separate and distinct holes formed in a single step. *Id.* at 13. Finally, Defendants argue that if Plaintiffs’ “separate and distinct” argument is accepted, then the contact holes must also be mutually exclusive. *Id.* at 16.

Claim 1 reads “...a contact hole for source wiring and gate wiring connection terminals...” ‘958 Patent at 58:40–41. As a preliminary matter, the Court finds that there was no clear disavowal by the patentee that would overcome the presumption that “a” in the context of comprising claim 1 means “one or more.” *See Baldwin v. Graphic Sys., Inc. v. Siebert, Inc.*, 512



F.3d 1338, 1342 (Fed. Cir. 2008). The presumption that “a” means “one or more” in the context of claim 1 is not surprising as there is no dispute that thousands of contact holes would be made using step G8. The issue presented is really whether that indefinite article can be read onto the last phrase of the fourth photolithographic step to require a separate hole for the source wiring connection terminal and a separate hole for the gate wiring connection terminal. The Court finds the use of that article unpersuasive to render separate holes for the source wiring and gate wiring connection terminals. While “a” may very well mean “one or more” it does not translate to “separate.”

The plain language of claim 1 gives no direction to resolve the parties’ dispute unless the Court were to interpret “...a contact hole for the source wiring and the gate wiring connection terminals...” to mean the same hole for the both the source wiring connection terminal and the gate wiring connection terminal. Such an interpretation would be equally inappropriate, as it would render “a” to mean “the same.” Defendants cite *Chef America* to argue that because the claim language is unambiguous, the Court cannot rewrite the claim simply because it does not match a preferred embodiment or is inoperable.<sup>2</sup> DEFS.’ BR. at 8 (citing *Chef America, Inc., v. Lamb-Weston, Inc.*, 358 F.3d 1371,1374 (Fed. Cir. 2004), resolving a dispute regarding “heating the resulting batter-coated dough to a temperature in the range of 400° F. to 850° F.”). However, the use of the indefinite article “a” as a prelude the last phrase of step G8 distinguishes this situation from *Chef America*.

In *Chef America*, the court held the disputed meaning of the claim language unambiguously required the dough to be heated to a temperature range of 400° F. to 850° F. *Chef America, Inc.*, 358 F.3d at 1374. The parties had disputed whether it was the oven or the dough

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<sup>2</sup> Defendants further cite *Chef America* to dispose of Plaintiffs’ assertion that the plain language “would render the array inoperable and have likely never been practiced in actual TFT manufacturing.” *Id.* (citing PLS.’s BR. at 2). To the extent Plaintiffs are making that argument, the Court finds it unpersuasive for the reasons discussed herein.

that must reach the desired temperature claimed, as the dough would be burnt to a crisp at 850° F. *Id.* at 1371. However, the claim language disputed in *Chef America* made no mention of the oven temperature, but rather plainly stated “heating the resulting batter-coated dough to a temperature in the range of 400° F. to 850° F.” *Id.* at 1374. Here, the last disputed phrase “...a contact hole for the source wiring and the gate wiring connection terminals...” mentions both the source wiring and the gate wiring connection terminals introduced by “a contact hole.” Unlike *Chef America*, where the claim language rendered only one unambiguous meaning of what was being claimed—notwithstanding the inoperability of the claimed invention—here, for the reasons explained above, the claim language is seeded with ambiguity surrounding the use of the indefinite article “a” followed by both the source wiring and gate wiring connection terminals. Similarly, the Patent Examiner’s statement that “the language literally states that there is a single contact hole for both the source wiring and gate wiring terminals...[but] the claim language implicitly requires separate contact holes for the source wiring and gate wiring connection terminals”<sup>3</sup> does not support Defendants’ contention that the claim language is unambiguous, but rather points out the exact ambiguity that lies therein. Thus, the express language claimed does not aid in the resolution of the parties’ dispute.

Ultimately, while the claim language raises ambiguity regarding the contact holes, neither party’s construction is supported by the specification. It is not disputed that, in step G8, claim 1 recites at least three contact holes for the corresponding structures—gate wiring, drain electrode, and source wiring and gate wiring connection terminals—all formed in a single photolithographic step. As Defendants point out, the specification does not disclose the creation of separate and distinct contact holes for the corresponding structures in a single step. The D embodiment is the only embodiment to disclose separate contact holes for the gate wiring and

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<sup>3</sup> NON-FINAL OFFICE ACTION at 4.

source wiring connection terminals formed in step D8, but that embodiment does not appear to correspond to step G8 of claim 1, because a separate step, D4, is used to form the contact hole reaching the gate wiring. Further, the D embodiment does not appear to disclose the formation of a contact hole reaching the drain electrode. Thus, Plaintiffs' reliance on the D embodiment to disclose a single step formation of the contact holes recited in claim 1, as required by step G8 of the claim, seems incorrect. Similarly, the Court has failed to locate support in the specification for a common contact hole for both the source wiring and gate wiring connection terminals formed in a single step along with a contact hole reaching the gate wiring and a contact hole reaching the drain electrode. The G embodiment, which corresponds to claim 1, fails to expressly mention the formation of a common contact hole, or separate contact holes, for the source wiring and gate wiring connection terminals.

Thus, while the parties have piecemealed portions of the specification and the incomplete *ex parte* reexamination of the '958 patent to support their arguments, the Court ultimately finds that the issue of whether there are three or four holes, and whether those corresponding holes are separate and distinct, is not ripe for claim construction, as the dispute presented centers around theories of invalidity pursuant to 35 U.S.C. § 112.

Having concluded the dispute is not ripe for claim construction, the Court declines to construe the term "patterning the passivation film to form a contact hole reaching the gate wiring, a contact hole reaching the drain electrode and a contact hole for source wiring and gate wiring connection terminals."<sup>4</sup>

Claim Language	Plaintiffs' Proposal	Defendants' Proposal	Court's Construction
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<sup>4</sup> While the parties bifurcated the phrase presented into a second term "a contact hole for source wiring and gate wiring connection terminals," the Court finds such bifurcation unnecessary when the instant phrase as a whole best presents the issue disputed without artificially removing a portion of the claim from the context of what is actually claimed.

Claim Language	Plaintiffs' Proposal	Defendants' Proposal	Court's Construction
<b>2. "a contact hole reaching the gate wiring"</b>			
958: 1	"an opening exposing a portion of the gate wiring"	Plain meaning, which is "one passivation layer opening exposing a portion of the gate wiring"	"an opening exposing a portion of the gate wiring"

At the *Markman* hearing on January 31, 2013, the Court proposed the following construction to which the parties agreed: "an opening exposing a portion of the gate wiring."

Claim Language	Plaintiffs' Proposal	Defendants' Proposal	Court's Construction
<b>3. "gate wiring"</b>			
958: 1	"a patterned, electrically conductive material that conveys gate signals"	"the patterned, electrically conductive material that is necessary to electrically connect the gate connection terminal to the gate electrodes"	Not ripe for construction

The Court presently declines to construe the term "gate wiring." At the *Markman* hearing, the Court proposed the following construction: "a patterned, electrically conductive material that conveys gate signals to gate electrodes." While it seems the parties may somewhat agree to that construction, for reasons explained at the hearing, the Court has determined that it is not necessary to construe the term at the present time.

Claim Language	Plaintiffs' Proposal	Defendants' Proposal	Court's Construction
<b>4. "in a state isolated from other portions"</b>			

Claim Language	Plaintiffs' Proposal	Defendants' Proposal	Court's Construction
958: 1	"isolated from the semiconductor portion of other adjacent thin film transistors having the gate wiring in common"	"isolated from at least the channel portion and another semiconductor portion"	"isolated from other portions of the semiconductor active film"

At the *Markman* hearing on January 31, 2013, the Court proposed the following construction to which the parties agreed: "isolated from other portions of the semiconductor active film"

Claim Language	Plaintiffs' Proposal	Defendants' Proposal	Court's Construction
<b>5. "metal film"</b>			
958: 1	"a thickness of one or more layers of metal"	Plain meaning, which is "a thin layer of a metal"	"a thickness of one or more layers of metal"

The parties dispute whether "metal film" is only one layer of metal or can be more than one layer of metal. Plaintiffs contend that the metal film "can be made of various types of metal or even multiple types of metal." PLS.' BRIEF at 11. In support, Plaintiffs cite to one portion of the specification describing a "first metal film" that can be formed from conductive material such as Cr, Ta, Mo, and Al, and another portion of the specification describing a "second metal film" formed of Cr and Al. '958 Patent at 35:3–39; 27:33–36. Plaintiffs further point to portions of the specification that describe why a particular metal might be used, and also why a multilayer structure might be used. *See* PLS.' BR. at 12 (citing '958 Patent at 3:60 – 4: 24 and 25:42–53, describing solutions to "signal delay," such as the use of Titanium, which is less prone to

oxidation, or the use of multilayers, by covering a highly conductive material, such as Al, with another metal that is not as easily oxidized). Plaintiffs also cite to the original application, which included a dependent claim “wherein the first metal film used comprises a conductive metal film and a barrier film.” *Id.* at 13. Finally, Plaintiffs argue the use of “a” is commonly construed to mean “one or more.” *Id.*

Defendants first contest that “a” does not necessarily mean “one or more.” DEFS.’ BR. at 22. Defendants then point out that the Patent Examiner rejected Plaintiffs’ attempt to introduce a dependent claim reciting a metal film having more than one layer on grounds that it failed to meet the requirements of 35 U.S.C. § 112. *Id.* at 23. Defendants also note that Plaintiffs’ citations to the specification come from the “B” embodiment and not the relevant “G” embodiment and argue that it is improper to read limitations from one embodiment into the other. *Id.* at 23–24. Finally, Defendants point out that the dependent claim in the original application cited by Plaintiffs was cancelled when the divisional application was filed for the ‘958 patent. *Id.* at 24.

Although Defendants are correct in asserting that Plaintiffs cite to embodiment “B” of the specification, that portion of the specification expressly calls a laminate structure a “metal film” and discloses multiple layers formed by more than one element: “a second metal film 64 of a laminate structure comprising a conductive film 62 made, for example, of Cr and a conductive film 63, made, for example, of Al is formed as shown in FIG 16.” ‘958 Patent at 27: 33–36. Similarly, the specification describes “a first metal film 434 comprising a conductive metal film 434a made of a good conductive metal material such as Al or Ta, and a barrier film 434b made of a metal material such as Cr...” ‘958 Patent at 51:16–20. On the whole, the specification consistently describes the “metal film” as having more than one layer and comprising more than one type of metal. The specification does not restrict the metal film to only one layer or only one

metal. Instead, the specification provides support that a “metal film” is not limited to just one layer.<sup>5</sup>

Accordingly, in resolving the parties’ dispute as to “metal film,” the Court construes “metal film” as “a thickness of one or more layers of metal.”

Claim Language	Plaintiffs’ Proposal	Defendants’ Proposal	Court’s Construction
<b>6. “connection terminals”</b>			
958: 1	plain and ordinary meaning, or alternatively, “terminals for electrical connection with a signal supply circuit and a scanning circuit”	“conductors for electrical connection to source wiring and/or gate wiring”	“conductors for electrical connection to source wiring and/or gate wiring”

At the *Markman* hearing on January 31, 2013, the Court proposed the following construction to which the parties agreed: “conductors for electrical connection to source wiring and/or gate wiring”

## CONCLUSION

For the foregoing reasons, the Court adopts the constructions set forth above.

**So ORDERED and SIGNED this 12th day of April, 2013.**



JOHN D. LOVE

UNITED STATES MAGISTRATE JUDGE

<sup>5</sup> Defendants also argue that the rejected attempts to add dependent claims in which the metal film is composed of more than one layer supports the contention that the metal film is only made of one layer. DEFS.’ BR. at 23. However, those claims were rejected under §112 for failure to be supported in the written description, and the Court declines to adopt Defendants’ proposal based on an incomplete *ex parte* reexamination that has not been fully presented to the Court and currently stands on appeal.